

IN THE CLAIMS

Claims 1-12 (canceled).

Claim 13 (currently amended) A process for the removal of sour gas from pressurised natural gas which is polluted by sulphur compounds and other sour gas compounds, comprising

- initially feeding the natural gas, which is to be desulphurised, into a sour gas absorption unit, in which the sulphur components ~~and any other components~~ are absorbed by a physically acting solution thus yielding a sour-gas rich absorbent;
- heating the sour-gas rich absorbent ~~absorbate~~;
- feeding the ~~absorbate~~ sour-gas rich absorbent into a high-pressure flash unit, in which ~~the sour-gas-poor absorbent and desorbed sour gas contained in the resulting mixture are~~ is separated yielding a sour-gas poor absorbent;
- cooling the desorbed sour gas and condensing the vaporised absorbent out of the sour gas stream;
- freeing the sour-gas-poor absorbent from the high-pressure flash unit from residual sour gas in a gas stripping unit by means of stripping gas; and
- cooling and recycling the absorbent obtained to the sour gas absorption unit, wherein a pressure is set in the high-pressure flash unit that permits the desorbed sour gas to be condensed by means of cooling water or cooling air.

Claim 14 (previously presented) The process according to claim 13, wherein the laden stripping gas obtained is cooled and fed to the sour gas absorption unit.

Claim 15 (previously presented) The process according to claim 13, wherein the stripping gas comprises either purified feed gas or desulphurised natural gas.

Claim 16 (previously presented) The process according to claim 14, wherein the stripping gas is fed to the sour gas absorption unit simultaneously with the feed gas.

Claim 17 (currently amended) The process according to claim 13, wherein the absorbent contained in the desorbed sour gas is condensed and admixed to the sour-gas rich absorbent absorbate prior to heating the sour-gas rich absorbent absorbate.

Claim 18 (currently amended) The process according to claim 13, wherein the pressure of the absorbate sour-gas rich absorbent to be heated is set to a pressure that is higher than that in the sour gas absorption unit.

Claim 19 (previously presented) The process according to claim 14, wherein the pressure of the stripping gas used is set to a pressure above that of the sour gas absorption unit and then fed into the sour gas absorption unit.

Claim 20 (currently amended) The process according to claim 13, wherein

- prior to being heated, the absorbate sour-gas rich absorbent from the sour gas absorption unit is fed to a recycle flash unit, in which a partial pressure reduction takes place, and the absorbate absorbent and desorbed gas contained in the resulting mixture are separated, and
- the desorbed gas obtained in the recycle flash unit is re-compressed and recycled to the sour gas absorption unit.

Claim 21 (currently amended) The process according to claim 20, wherein the pressure of the sour-gas rich absorbent absorbate to be heated is set to a pressure that is higher than that in the recycle flash unit.

Claim 22 (currently amended) The process according to claim 20-49, wherein the pressure in the high-pressure flash unit is higher than that in the recycle flash unit.

Claim 23 (currently amended) The process according to claim 20-49, wherein the laden stripping gas and the gas obtained in the recycle flash unit are combined, re-compressed and fed to the sour gas absorption unit.

Claim 24 (previously presented) The process according to claim 13, wherein the high-pressure flash unit consists of a cascade of several series-connected flash vessels preceded by partial pressure reduction and re-compression of the sour gases obtained from the downstream flash vessels to the pressure of the first flash vessel of the cascade.

Claim 25 (new) A process for the removal of sour gas from pressurised natural gas which is polluted by sulphur compounds and other sour gas compounds, comprising

- initially feeding the natural gas, which is to be desulphurised, into a sour gas absorption unit, in which the sulphur components are absorbed by a physically acting solution thus yielding a sour-gas rich absorbent;
 - heating the sour-gas rich absorbent;
 - feeding the sour-gas rich absorbent into a high-pressure flash unit, in which desorbed sour gas is separated yielding a sour-gas poor absorbent;
 - cooling the desorbed sour gas and condensing the vaporised absorbent out of the sour gas stream;
 - freeing the sour-gas-poor absorbent from the high-pressure flash unit from residual sour gas in a gas stripping unit by means of stripping gas; and
 - cooling and recycling the absorbent obtained to the sour gas absorption unit, wherein a pressure is set in the high-pressure flash unit that permits the desorbed sour gas to be condensed by means of cooling water or cooling air,
- wherein, prior to heating the sour-gas rich absorbent, absorbent contained in the desorbed sour gas is condensed and admixed to the sour-gas rich absorbent.

Claim 26 (new) A process for the removal of sour gas from pressurised natural gas which is polluted by sulphur compounds and other sour gas compounds, comprising

- initially feeding the natural gas, which is to be desulphurised, into a sour gas absorption unit, in which the sulphur components are absorbed by a physically acting solution thus yielding a sour-gas rich absorbent;
- heating the sour-gas rich absorbent;
- feeding the sour-gas rich absorbent into a high-pressure flash unit, in which desorbed sour gas is separated yielding a sour-gas poor absorbent;

- cooling the desorbed sour gas and condensing the vaporised absorbent out of the sour gas stream;
- freeing the sour-gas-poor absorbent from the high-pressure flash unit from residual sour gas in a gas stripping unit by means of stripping gas; and
- cooling and recycling the absorbent obtained to the sour gas absorption unit, wherein a pressure is set in the high-pressure flash unit that permits the desorbed sour gas to be condensed by means of cooling water or cooling air, wherein
 - prior to being heated, the sour-gas rich absorbent from the sour gas absorption unit is fed to a recycle flash unit, in which a partial pressure reduction takes place, and the absorbent and desorbed gas are separated;
 - the desorbed gas obtained in the recycle flash unit is re-compressed and recycled to the sour gas absorption unit; and
 - the laden stripping gas and the gas obtained in the recycle flash unit are combined, re-compressed and fed to the sour gas absorption unit.